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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,633

01/06/2006

Masao Ieno

2005-2019A

3272

513 7590 03/18/2011  
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EXAMINER

GOTTFREDSON, GAREN

ART UNIT

PAPER NUMBER

1619

NOTIFICATION DATE

DELIVERY MODE

03/18/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/563,633

Applicant(s)

IENO ET AL.

Examiner

GAREN GOTFREDSON

Art Unit

1619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-8 and 15-22 is/are pending in the application.
- 4a) Of the above claim(s) 15-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 6-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/25/11</u>   | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### **Status of the Claims**

Claims 1-2, 6-8, and 15-22 are pending in the application. Of these, claims 1-2 and 6-8 are under consideration on the merits. Claims 15-22 remain withdrawn from consideration.

### **Status of the Rejections/Objections**

The objection to the specification is withdrawn.

Applicants' correction of the non-compliant amendment to claim 1 is acknowledged.

The rejection of the claims under 35 U.S.C. 103(a) is maintained as detailed below.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-2 and 7-8 are rejected under 35 U.S.C. 103(a) as unpatentable over Nakashima et al. (U.S. Pat. No. 7,273,501; of record) in view of Nomura et al. (Japanese Patent Abstract of Publication No. 08-060547; of record in Applicants' IDS filed 1/6/06) for reasons of record.**

Regarding claims 1 and 8, Nakashima discloses a fibrous structure for use in clothing as a moisture absorptive/desorptive product (column 1, 1<sup>st</sup> paragraph), comprising a carboxyl-group containing acrylic fiber polymer (column 6, third full paragraph) that is crosslinked via a reaction with a hydrazine compound (column 7, 1<sup>st</sup> full paragraph). The hydrazine cross-linker may be any of those recited by claim 1 (column 7, 2<sup>nd</sup> full paragraph).

Regarding claim 7, the fibrous structure of Nakashima possesses a saturated index of moisture absorption of 10% by weight or more at 20° C and 65% relative humidity, which encompasses Applicants' claimed range of 20% or more (column 3, lines 20-24).

Nakashima does not further disclose that the polymer is ionically bonded to one of the recited amino acid derivatives via an acidic group (claim 1).

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Nomura, however, discloses that a fiber skin care product comprising serine will promote moisture retention on the skin (see Abstract). The product is obtained by immersing a fiber into an aqueous solution of sericin, a polypeptide rich in the amino acid serine.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to modify the fibrous structure of Nakashima to include sericin as taught by Nomura, in order to further enhance its moisture conditioning properties. The addition of sericin to the fibrous structure will necessarily form ionic bonds between the sericin and the acidic bonds of the acrylic fiber polymer as recited by claim 1, since the process of immersing a fiber into an aqueous solution of an amino acid derivative as taught by Nomura is identical to the process described in Examples 1-12 of the instant specification.

Regarding claim 2, Nakashima does not explicitly disclose the claimed eluting rate of the amino acid derivative. The acrylic polymers disclosed as useful in the invention of Nakashima, however, include methyl (meth)acrylate and ethyl (meth)acrylate (column 6, 3<sup>rd</sup> full paragraph). These same polymers are also disclosed as useful in the instantly claimed invention (page 18, lines 5-6 of the specification). One of ordinary skill in the art, therefore, would expect that the elution properties of the claimed sustained release polymer would be the same as the fibrous structure of Nakashima, since a product cannot be separated from its properties.

The U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that an Applicant may present previously unmeasured characteristics. When the prior art appears to contain the same ingredients that are disclosed by Applicants' own specification as suitable for use in the invention, a prima facie case of obviousness has been established, and the burden is properly shifted to Applicants to demonstrate otherwise.

**Claim 6 is rejected under 35 U.S.C. 103(a) as unpatentable over Nakashima et al. in view of Nomura et al. as applied above, and further in view of Hirose et al. (Japanese Patent Abstract of Publication No. 2002-013071; of record in Applicants' IDS filed 1/6/06) for reasons of record.**

The teachings of Nakashima and Nomura are relied upon as discussed above. Neither Nakashima nor Nomura further disclose a polymer composition as claimed, comprising an amino acid derivative that is arginine, lysine, or histidine.

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Hirose, however, teaches that a fibrous skin care product comprising arginine will promote moisture retention on the skin (see Abstract).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to modify the fibrous structure of Nakashima to include arginine as taught by Hirose instead of sericin as taught by Nomura, since Hirose teaches that arginine has the same moisture retaining properties as serine. The addition of arginine to the fibrous structure will necessarily form ionic bonds between the arginine and the acidic bonds of the acrylic fiber polymer as recited by claim 1, since the process of immersing a fiber into an aqueous solution of an amino acid derivative as taught by Nomura is identical to the process described in Examples 1-8 of the instant specification.

#### ***Response to Applicants' Arguments***

Applicants argue that Nomura discloses improving the water-retaining function of skin by providing a fiber product comprising a protein such as sericin, but does not disclose that the moisture absorptive property of the fiber itself is improved by applying sericin to the fiber. Applicants also assert that Nakashima suggests that the moisture absorptive/desorptive properties of a fiber are reduced by decreasing the number of carboxylate groups, such that the reference teaches away from applying sericin to the fiber.

In response, it is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. MPEP 2144.IV. See, e.g., *In re Kahn*, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (motivation question arises in the context of the general problem confronting the inventor rather than the specific problem solved by the invention); *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323, 76 USPQ2d 1662, 1685 (Fed. Cir. 2005) ("One of ordinary skill in the art need not see the identical problem addressed in a prior art reference to be motivated to apply its teachings."); *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), cert. denied, 500 U.S. 904 (1991). In the instant case, one of ordinary skill would have been motivated to combine the teachings of Nomura and Nakashima in order to obtain a product providing improved water retention properties when applied to skin. Whether Nomura teaches or suggests the moisture absorptive property of the fiber itself is not essential to the rejection.

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Moreover, the moisture-absorbing abilities of sericin are a property of the protein itself, and not of the substrate to which the sericin is applied. Thus, one of ordinary skill would have had a reasonable expectation of success in increasing the moisture absorbing properties of a fiber by applying sericin, since sericin is known to have moisture absorbing properties generally. Indeed, and as evidenced by Zhang et al. (Biotechnology Advances 20 (2002) 91-100), sericin was known to enhance moisture absorbing and desorbing properties of a wide variety of materials other than skin at the time of the invention, including polyurethane foam, polyvinyl alcohol hydrogels, fibroin-containing wound dressings, acrylic acid/sericin copolymers, and polymer fibers including polyester, rayon, and cotton (see page 92, 4<sup>th</sup> full paragraph, page 95, 3<sup>rd</sup> paragraph, page 96, 1<sup>st</sup> full paragraph, page 97, 1<sup>st</sup> paragraph, and page 98, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs).

Further, one of ordinary skill would not expect a fiber to exhibit reduced moisture absorptive properties if coated with a highly moisture absorptive substance. Thus, the teachings of Nakashima and Nomura, taken as a whole in view of the knowledge of the art at the time of the invention, do not teach away from their combination.

### Conclusion

No claim is allowed. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **GAREN GOTFREDSON** whose telephone number is (571)270-3468. The Examiner can normally be reached on **Monday through Friday from 8:30AM to 5:00PM.**

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Robert A. Wax can be reached on (571) 272-0623. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GJG/

/Patricia A. Duffy/

Primary Examiner, Art Unit 1645